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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/801,339	03/07/2001	Tong Chen	010025	4773

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EXAMINER

TRAN, LONG K

ART UNIT

PAPER NUMBER

2818

DATE MAILED: 06/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/801,339

Applicant(s)

CHEN ET AL.

Examiner

Long K. Tran

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. Applicant's arguments with respect to claims 1 - 22 have been considered but are moot in view of the new ground(s) of rejection.

Claims 1 - 14

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1, 2,3, 5, 7,8,10,11 and 14** are rejected under 35 U.S.C. 102(b) as being anticipated by Choi (U.S. Patent 5,753,857).

Regarding claims 1, 2 and 14, Choi discloses a device comprising: a base 18 (fig.2); a device 17 (fig. 2) connected to the base; and a cover including a plastic body 10 (fig. 2), wherein the body is connected to the base such that the device is enclosed by the cover such that an inner surface of the body of the cover and an upper surface of the device define an air gap therebetween (fig. 2), and wherein the electrically conductive lead 13 (fig. 2) includes an exposed portion 12 (fig. 2) electrically connected to the device.

Regarding claim 3, Choi discloses the inner surface of the body 10 (fig. 2) of the cover includes a sidewall connected to the base (fig. 2).

Regarding claims 5 and 7, Choi discloses the ceramic base 2 (fig. 1) or plastic base 18 (fig. 2).

Art Unit: 2818

Regarding claim **8**, Choi discloses the apparatus comprising an electrically conductive bump 17b (fig. 2) between the exposed portion 13a (fig. 2) of the lead and the device.

Regarding claims **10** and **11**, Choi discloses the device includes a semiconductor chip 4 (fig. 1) and 17 (fig. 2).

Claim Rejections - 35 USC § 103

6 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims **4,6, 9,12** and **13**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi (U.S. Patent No. 5,753,857) in view of Tanaka et al. (U.S. Patent No. 5,097,318).

Regarding claim **4**, Choi discloses the claimed invention except for the base includes an electrically conductive base-plate on which the device is mounted.

Tanaka et al. disclose base substrate 6 includes wiring layer 10 (fig. 1) connecting the connection electrodes for the wire bondings at their terminals.

At the time the invention was made, It would have been an obvious to one having ordinary skill in the art to design the base includes an electrically conductive base-plate on which the device is mounted. Applicant has not disclosed that the base includes an electrically conductive base-plate on which the device is mounted provides an

Art Unit: 2818

advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either base substrate 6 includes wiring layer or the base includes an electrically conductive base-plate on which the device is mounted because both bases provide an electrical connection. Therefore, it would have been obvious to ordinary skill in this art to use base substrate 6 includes wiring layer to obtain the invention as specified in claim 4.

Regarding claim 6, Choi discloses the claimed invention except for at least one electrically conductive via extending from a first surface of the substrate to a second surface of the substrate; and at least one electrically conductive ball connected to the electrically conductive via.

Tanaka et al. disclose solder bump (fig. 8, 11) connected to the conductor through-holes (fig. 8, 4) in order to change the wiring pattern design without changing the insulating base substrate and the insulating cover substrate.

At the time the invention was made, It would have been an obvious to one having ordinary skill in the art to include at least one electrically conductive via extending from a first surface of the substrate to a second surface of the substrate and at least one electrically conductive ball connected to the electrically conductive via. Applicant has not disclosed that at least one electrically conductive via extending from a first surface of the substrate to a second surface of the substrate and at least one electrically conductive ball connected to the electrically conductive via provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the

Art Unit: 2818

art, furthermore, would have expected Applicant's invention to perform equally well with either electrically conductive via or the out-leads 12 (fig. 2) or solder bump connected to the conductor through-holes because both methods provide an electrical connection between the device and the exposed portion of the leads to the other side of the base. Therefore, it would have been obvious to ordinary skill in this art to use conductor through-holes to obtain the invention as specified in claim 6.

Regarding claim 9, Choi and Tanaka et al. disclose the claimed invention except for the body of the cover includes liquid crystal polymer.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the body of the cover including liquid crystal polymer, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

Regarding claims 12 and 13, Choi and Tanaka et al. disclose the claimed invention except for the device is selected from the group consisting of a MMIC; and the group consisting of a MEMS device, an optoelectronic device, a crystal device, an acoustic wave device, and a capacitor.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a device selected from the group consisting of a MMIC; and the group consisting of a MEMS device, an optoelectronic device, a crystal device, an acoustic wave device, and a capacitor, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art.

Claims 15 – 22

Claims **15-22**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi (U.S. Patent No. 5,753,857) in view of Tanaka et al. (U.S. Patent No. 5,097,318).

Regarding claim **15**, Choi discloses a device comprising: a base 18 (fig.2); a device 17 (fig. 2) connected to the base; and a cover including a plastic body 10 (fig. 2), wherein the body is connected to the base such that the device is enclosed by the cover such that an inner surface of the body of the cover and an upper surface of the device define an air gap therebetween (fig. 2), and wherein the electrically conductive lead 13 (fig. 2) includes an exposed portion 12 (fig. 2) electrically connected to the device. Choi does not disclose the base includes an electrically conductive base-plate on which the device is mounted.

Tanaka et al. disclose base substrate 6 includes wiring layer 10 (fig. 1) connecting the connection electrodes for the wire bondings at their terminals. At the time the invention was made, It would have been an obvious to one having ordinary skill in the art to design the base includes an electrically conductive base-plate on which the device is mounted. Applicant has not disclosed that the base includes an electrically conductive base-plate on which the device is mounted provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either base substrate 6 includes wiring layer or the base includes an electrically conductive base-plate on which the device is mounted because both bases provide an electrical connection. Therefore, it would have been obvious to ordinary skill

in this art to use base substrate 6 includes wiring layer to obtain the invention as specified in claim **15**.

Regarding claims **16, 17**, Choi discloses the device includes a semiconductor chip 4 (fig. 1) and 17 (fig. 2).

Regarding claim **18**, Choi and Tanaka et al. disclose the claimed invention except for the device is selected from the group consisting of a MMIC; and the group consisting of a MEMS device, an optoelectronic device, a crystal device, an acoustic wave device, and a capacitor.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a device selected from the group consisting of a MMIC; and the group consisting of a MEMS device, an optoelectronic device, a crystal device, an acoustic wave device, and a capacitor, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art.

Regarding claims **19** and **20**, Choi and Tanaka et al. disclose the claimed invention except for the device includes a GaAs substrate; and the base-plate includes a metal selected from the group consisting of CuW and Cu/Mo/Cu; and the body of the cover includes liquid crystal polymer.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to the device includes a GaAs substrate; and the base-plate includes a metal selected from the group consisting of CuW and Cu/Mo/Cu; and the body of the cover includes liquid crystal polymer, since it has been held to be within the

Art Unit: 2818

general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

Regarding claim **21**, Choi discloses an inner surface of the body of the cover 10 (fig. 2) and an upper surface of the device 17 (fig. 2) define an air gap

Regarding claim **22**, Choi discloses the inner surface of the body 10 (fig. 2) of the cover includes a sidewall connected to the base (fig. 2).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Long K. Tran whose telephone number is 703-305-5482. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 703-308-4910. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7466 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3329.

Long Tran 

June 25, 2002


HOAI HO
PRIMARY EXAMINER